1. An imaging device comprising:

an optical plate including:

a base made of an optically transparent material and having an index of refraction, the base including an array of microstructures along a first surface, and

a coating deposited on the first surface of the base and forming a surface for receiving a finger, the coating having an index of refraction that is different from the index of refraction of the base; and

an imaging system positioned at a second surface of the base to receive light from the finger at an observation angle measured relative to the finger receiving surface and to form an image of a fingerprint pattern of the finger based on the received light.

2. The device of claim 1 further comprising a light source at a third surface of the base to illuminate the first surface of the base.

3. The device of claim 2 in which the third surface is perpendicular to the first surface.

4. The device of claim 1 in which the index of refraction of the coating is less than the index of refraction of the base.

5. The device of claim 4 in which each microstructure comprises a surface that is substantially perpendicular to an observation path such that light from the finger strikes the microstructure surface at an angle substantially perpendicular to the microstructure surface.

6. The device of claim 1 in which the array of microstructures is defined by a spatial period that is approximately two times greater than a maximum spatial period of ridges in an average fingerprint pattern.

7. The device of claim 1 in which the coating comprises silicone.

8. The device of claim 1 in which the base includes a spherically-shaped reflective surface positioned along a fourth surface that is approximately lateral to the first surface.

9. The device of claim 8 in which the spherically-shaped reflective surface collects light from the finger onto the imaging system positioned at the second surface.

10. The device of claim 8 in which the spherically-shaped reflective surface is formed from a converging mirror.

11. The device of claim 8 in which the spherically-shaped reflective surface is formed from a diverging mirror.

12. The device of claim 1 in which the imaging system comprises:

an aperture;

an objective at the aperture; and

a detector for receiving light collected by the aperture and the objective to form the image of the fingerprint pattern.

13. The device of claim 12 in which the imaging system comprises a reflective surface positioned between the objective and the detector for collecting light from the objective and for focusing the light onto the detector.

14. The device of claim 12 in which the detector comprises a CCD.

15. The device of claim 12 in which the detector comprises a CMOS sensor.

16. The device of claim 12 in which the aperture defines an aperture beam of light rays used by the detector to form the fingerprint pattern image.

17. The device of claim 1 in which the index of refraction of the coating is greater than the index of refraction of the base.

18. The device of claim 17 in which each microstructure comprises a first surface and a second surface that are positioned such that light striking the first surface at an angle that is greater than the critical total internal reflection angle for the coating and the base interface reflects from the first surface and strikes the second surface at an angle that substantially coincides with a normal to the second surface.

19. A method of imaging a fingerprint, the method comprising:

providing an optical plate that includes:

a base made of an optically transparent material and having an index of refraction, the base including an array of microstructures along a first surface, and

a coating deposited on the first surface of the base and forming a surface for receiving a finger, the coating having an index of refraction that is different from the index of refraction of the base;

receiving a finger at the finger receiving surface;

illuminating the finger receiving surface with a light source;

collecting light from the finger receiving surface;

receiving the collected light at an imaging system positioned at a second surface of the base, the received light traveling at an observation angle measured relative to the finger receiving surface; and

forming an image of a fingerprint pattern of the received finger based on the received light.

20. The method of claim 19 further comprising positioning the light source at a third surface of the base, the third surface being perpendicular to the finger receiving surface.

21. The method of claim 19 in which each microstructure comprises a surface that is perpendicular to an observation path.

22. The method of claim 19 in which the array of microstructures is defined by a spatial period that is approximately two times greater than a maximum spatial period of ridges in an average fingerprint pattern.

23. The method of claim 19 in which collecting light from the finger includes collecting the light from the finger onto the imaging system.

24. The method of claim 19 in which the imaging system includes an aperture, an objective at the aperture, and a detector.

25. The method of claim 24 in which receiving light at the imaging system comprises defining an aperture beam of light rays with the aperture and focusing the aperture beam of light onto the detector with the objective.

26. The method of claim 19 in which the index of refraction of the coating is less than the index of refraction of the base.

27. The method of claim 26 in which each microstructure comprises a surface having a normal that substantially coincides with an observation path such that light from the finger strikes the microstructure surface at an angle that substantially coincides with a normal of the microstructure surface.

28. The method of claim 19 in which the index of refraction of the coating is greater than the index of refraction of the base.

29. The method of claim 28 in which each microstructure comprises a first surface and a second surface that are positioned such that light from the finger strikes the first surface at an angle that is greater than the critical total internal reflection angle for the coating and the base interface and reflects from the first surface and strikes the second surface at an angle that substantially coincides with a normal to the second surface.

30. An optical plate for use in an imaging device, the optical plate comprising:

a base made of an optically transparent material and having an index of refraction, the base including an array of microstructures along a first surface; and

a coating deposited on the first surface of the base and forming a surface for receiving a finger, the coating having an index of refraction that is different from the index of refraction of the base.

31. The optical plate of claim 30 in which the base includes a second surface for coupling to an imaging system and the base transmits light into the imaging system from the finger at an observation angle measured relative to the surface of the coating.

32. The optical plate of claim 30 in which the index of refraction of the coating is less than the index of refraction of the base.

33. The optical plate of claim 32 in which each microstructure comprises a surface that is substantially perpendicular to an observation path such that light from the finger strikes the microstructure surface at an angle substantially perpendicular to the microstructure surface.

34. The optical plate of claim 30 in which the index of refraction of the coating is greater than the index of refraction of the base.

35. The optical plate of claim 34 in which each microstructure comprises a first surface and a second surface that are positioned such that light striking the first surface at an angle that is greater than the critical angle for the coating and the base interface reflects from the first surface and strikes the second surface at an angle that substantially coincides with a normal to the second surface.